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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/731,520

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10/19/2005

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EXAMINER

ALEMU, EPHREM

ART UNIT

PAPER NUMBER

2821

DATE MAILED: 10/19/2005

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OCT 28 2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/731,520

Applicant(s)

GAUCHER ET AL.

Examiner

Ephrem Alemu

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 7, 9 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Siwiak et al. (5,410,749).

Re claims 1, 2, 7, 9 and 10, Siwiak discloses a wireless device (i.e., a radio communication) comprising antenna (300), the antenna (300) comprising:

a substrate (i.e., dielectric material 304) (Fig. 2; abstract; Col. 3, lines 23-54);

ground plane (314) formed on a surface of the substrate (i.e., dielectric material 304)

(Fig. 2; abstract; Col. 3, lines 23-54); and

at least one radiating element (hat element) (302) formed on one end of a conductive via stub (i.e., feeders 308, 310 extending through apertures 316, 312 and conductive shorting element 306 extends through an aperture 313) formed in the substrate (i.e., dielectric material 304) (Figs. 2, 3; abstract; Col. 3, lines 23-59). The conductive via stub being a radiating element as claimed has been interpreted to encompass the conductive via stub (i.e., feeders 308, 310 extending through apertures 316, 312 and conductive shorting element 306 extends through an aperture 313).

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3. Claims 1, 11, 12, 22, 23 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Takahashi et al. (5,903,239).

Re claims 1, 11, 12, 22, 23 and 24, Takahashi discloses an integrated communications device (i.e., antenna apparatus) comprising:

an IC (integrated circuit) chip (i.e., circuit chip 52) (Fig. 3; Col. 4, lines 3-37); and

an antenna (i.e., antenna chip 54) bonded to the IC chip (i.e., circuit chip 52), the antenna (i.e., antenna chip 54) comprising:

a substrate (9) (Fig. 3); and

at least one radiating element (hat element) (i.e., microstrip patch antenna 10, 19) comprising conductive via stub (i.e., through hole 11) formed in the substrate (9) (Figs. 3, 8; abstract; Col. 1, lines 5-17; Col. 4, lines 3-37; wherein the IC chip comprises a transceiver, a receiver, or a transmitter; and wherein the dielectric layer of the antenna acts as a cover for the integrated device (see Fig. 8)). The conductive via stub being a radiating element as claimed has been is interpreted to encompass the conductive via stub (i.e., through hole 11)

4. Claims 1, 4, 5, 12-20, 23, 25, 26-33 and 34-38 are rejected under 35 U.S.C. 102(b) as being anticipated by Araki et al. (5,400,039).

Re claims 1, 4, 5, 12, 13, 14, 15, 16, 17, 18, 19, 20, 23 and 25, Araki discloses an integrated communications device (i.e., a mobile communication system having integrated multilayered microwave circuit) (Figs. 1-3, 14-19) comprising:

an IC (integrated circuit) chip (i.e., communication portion 27) (Figs. 1-3, 5-8, 14-19; Col. 4, lines 3-37); and

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an antenna (i.e., antenna portion 21) bonded to the IC chip (i.e., communication portion 27) (Figs. 1-3; 14-19; Col. 3, lines 48-62; Col. 6, lines 23-47; Col. 12, lines 16-26; Col. 13, lines 17-60; wherein the antenna is an omni-directional antenna or a directional antenna), the antenna (i.e., antenna portion 21) comprising:

a substrate (i.e., dielectric layers 4, 6, 14) (Figs. 1-3, 14-19; Col. 6, lines 23-47; Col. 13, lines 17-24);

at least one radiating element (i.e., radiator 22, 23, 24 as form of a hat element) comprising conductive via stub (i.e., via conductor 2a as a form of feeding via to provide connection to the antenna) formed in the substrate (i.e., dielectric layers 4, 6, 14);

a plurality of patterned layers (i.e., conductive layers 1, 3, 12, 17) comprising a ground plane (i.e., grounding layer 3) formed on a surface of the substrate (i.e., dielectric layer 14) of the antenna (i.e., antenna portion 21); an insulation layer formed on the ground plane; the plurality of patterned layers (i.e., conductive layers 1, 3, 12, 17) formed between the antenna (i.e., antenna portion 21) and IC chip (i.e., communication portion 27) for providing electrical interconnections (i.e., dielectric layers 4, 6, 14);

impedance matching network that formed from the plurality of patterned layers comprises a microstrip transmission line (Figs. 1-3, 14-19; Col. 3, lines 48-62; Col. 6, lines 23-47; Col. 13, lines 17-60; Col. 15, 11-14; wherein the IC chip (i.e., communication portion 27) comprises a transceiver, a receiver, or a transmitter; wherein a grounding via (13) is provided for ground connections between the IC chip (i.e., communication portion 27) and the ground plane (i.e., grounding layer 3) of the antenna.). The conductive via stub being a radiating element as

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claimed has been is interpreted to encompass the conductive via stub (i.e., via conductor 2a as a form of feeding via to provide connection to the antenna)

Re claims 26-33 and 34-48, given Araki's integrated communications device (i.e., a mobile communication system having integrated multilayered microwave circuit) as described above in claims 1, 4, 5, 12, 13, 14, 15, 16, 17, 18, 19, 20, 23 and 25, the method for constructing an antenna and/or an integrated communication apparatus as claimed in claims 26-33 and/or 34-38 is inevitable.

5. Claims 1-3 and 7-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen (US 6,809,689).

Re claims 1, 3, 7 and 10, Chen discloses a wireless device (i.e., portable electronic apparatus (6) including an antenna (100) (Figs. 2-5), the antenna (100) comprising:

a substrate (1); and

at least one radiating element (hat) (2) formed on one end of a conductive via stub (i.e., conductive vias 13, 14) formed in the substrate (1) (Figs. 2-5; Col. 3, lines 1-11).

Re claim 2, Chen further discloses a ground plane (i.e., grounding metal layer 4) formed on a surface (12) of the substrate (1) (Figs. 2-5; Col. 3, lines 30-38; wherein the antenna (10) is an omni-directional antenna (see Figs. 7-10)).

Re claims 8 and 9, Chen further discloses the dielectric substrate is a printed circuit board (Figs. 2-5; abstract; Col. 3, 1-3).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 6 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Takahashi (US 5,903,239) in view of The ARRL antenna book (pages 2-24 to 2-25).

Re claims 6 and 21, Takahashi discloses the claimed limitations as described above in claims 1 and 12, except the antenna having resonant frequency of about 20 GHz.

However, The ARRL antenna book discloses that any antenna design can be scaled in size for use in another frequency.

It would have been in the skill of an artisan at the time the invention was made to scale the size of Takahashi antenna as taught in the ARRL antenna book for the purpose of operating the antenna in about 20 GHz or greater.

Response to Arguments

8. Applicant's arguments filed 7/25/05 have been fully considered but they are not persuasive. In response to applicant argument and amendment the conductive via being a radiating element is respectfully disagreed. The examiner would like to direct applicants' to the exemplary illustration of Fig. 5 of applicants' invention. As described in paragraph [0064] the radiating element of the antenna element (50) comprises a first conductive via (54) and a second conductive via (55) and a top element (56). Based on applicants' own teaching as discussed above the conductive via stub radiating element encompasses via stubs (antenna feed elements) as discussed above in the cited references. Therefore, the rejection is proper and this action is made final.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ephrem Alemu whose telephone number is (571) 272-1818. The examiner can normally be reached on M-F Flex hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don K. Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EA

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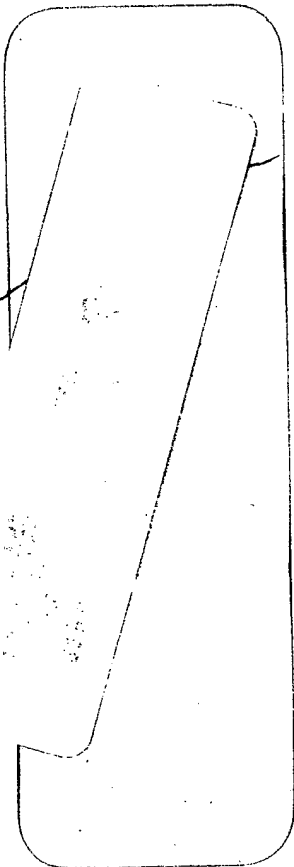
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